Appl. No.:

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Nucleotide Sequences of a New Class of Diverged Delta-9 Stearoyl-ACP Desaturase Genes

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MALKLHHTAFNPSM--AVTSSGLPRSYHL----RSHRVFWASSTIGITS-KEIPNAKKPHMPPREAHVQKTHS-----MPPQKIEIF SPSPWAVWTRAWTAEENRHGDLLRTYLYLSGRVDMAKVEKTVHYLISAGMDPGTDNNPYLGFVYTSFQERATFVAHGNTARL--AKEGGD -----AIRARGPVAATQAPARR--RQC----RVSAANGAP----AARARVTHS-----MPPEKAEVF ----TVRVSGCGAVVAPS--R--RQC-----RVSAAVLTAAETATATRRKVTHS------MPPEKAEVF -----QIQTCYSIRIQILP---LP-WARRTGRHKMLPPIAAISATPPSLKSPKTHS------MPPEKIEIF MALLINSTITVAMKONPLVAVSFPRITCLGSSFSPPRLLRVSCVATNPSKTSEETDKKKFRPIKEVPNOVTHT-----ITQEKLEIF MALKINPVITFPS-----TRSINNFSSR----SPRIFIMAASTFNSTSTKEAEKLKKSHGPPKEVHMQVIHS------MPPQKLEIF MALRINPIPT---Q-----TFSLPQMPSL----RSPRFRMASTL--RSGSKEVENIKKPFTPPREVHVQVTHS------MPPQKIEIF KSLEGWASEWVLPLIKPVEQCWQPQNFLPDPS-LPHEEFSHQVKELRERTKELPDEYFVVLVGDMVTEDALPTYQTMINNLDGVKDDSGT AHLEPWAEAHVLPLLKPAEEAWQPSDMLPDPAALGDEGFHDACRELRARAASVPDAHLVCLVGNMITEEALPTYQSVPNRFEAVRDLTGA RSLEGWARSSLLPLLKPVEECWQPTDFLPDSS---SEMFEHQVHELRARAAGLPDEYFVVLVGDMITEEALPTYQTMINTLDGVRDETGA KSLESWASQSVLPLLKPVEQCWQPQEFVPDSS-LPFGDFTDQVKALRDRTAELPEEYFVVLVGDMITEDALPTYQSMINNLDGVRDETGS KSLEGWAEENVLVHLKPVEKCWQPQDFLPDPA--SEG-FWDQVKELRERTKEIPDEYLVVLVGDMITEEALPTYQTMLNTLDGVRDETGA KSMENWAQENLLSYLKPVEASWQPQDF1PETN--DEDRFYEQVKELRDRTKEIPDDYFVVLVGDMITEEALPTYQTTLNTLDGVKDETGG KSLEGWAEDVLLPHIKPVEKCWQPQDFLPEPE--SDG-FEEQVKELRARAKELPDDYFVVLVGDMITEEALPTYQTMLNTLDGVRDETGA KSLEDWADQNILTHLKPVEKCWQPQDFLPDPS--SDG-FEEQVKELRERAKEIPDDYFVVLVGDMITEEALPTYQTMLNTLDGVRDETGA DSTAWARWIRGWSAEENRHGDALSHYMYLSGRVDMRQVDRTVHRLIASGMAMNAARSPYHGFIYVAFQERATAISHGNMARHVGA--HGD SNCPWAVWTRAWTAEENRHGDILGKYMYLSGRVDMRMVEKTVQYLIGSGMDPGTENNPYLGFVYTSFQERATAVSHGNTARL--ARAHGD ---YLSGRFDMAEVERAVHRLIRSGMAVDPPCSPYHAFVYTAFQERATAVAHGNTARLVGARGHGD SACPWAVWTRTWTAEENRHGDILGKYMYLSGRVDMRMVEKTVQYLIGSGMDPGTENNPYLGFVYTSFQERATAVSHGNTARL--ARAHGD SPSPWALWTRAWTAEEKRHGDLLRTYLYLSGRVDMKKIEKTVQYLIGSGMDPGTENNPYLGFVYTSFQERATFVSHGNTARL--AKEGGD SLISWAIWTRAWTAEENRHGDLLNKYLYLTGRVDMKQIEKTIQYLIGSGMDPRSENNPYLGFIYTSFQERATFISHGNTARL--AKDHGD SLTPWAVWVRAWTAEENRHGDLLNKYLYLSGRVDMRHVEKTIQYLIGSGMDSKFENNPYNGFIYTSFQERATFISHGNTAKL--ATTYGD SLTPWAIWTRAWTAEENRHGDLLNKYLYLSGRVDMRQIEKTIQYLIGSGMDPKTENNPYLGFIYTSFQERATFISHGNTARL--AKDHGD SLTSWAIWTRAWTAEENRHGDLLNKYLYLSGRVDMKQIEKTIQYLIGSGMDPRTENSPYLGFIYTSFQERATFISHGNTARL--AKEHGD RSLEGWAARSLLPLLKPVEECWQPADFLPDSS---SEMFGHEVRELRARAAGLPDEYFVVLVGDMVTEEALPTYQTMINTLDGVRDETGA M--QAHGI--M--QVVG--SID12 (corn) SID10 (corn) SID12 (corn) SID14 (rice) SID10 (corn) SID12 (corn) SID14 (rice) SID16 (rice) SID16 (rice) SID14 (rice) SID16 (rice) SID23 (soy) SID23 (soy) SID23 (soy) SID2 (soy) SID2 (soy) gi4704824 gi4704824 gi4704824 gi3355632 g13355632 gi6957724 gi6957724 qi3355632 gi6957724 gi267036 gi267036 gi267036

M--LSIIFKEFVKYNRHVIKTMQIRTCHSITTQTLPQ--LPCSSRKAHHRHLLPPLNAAVSAAP-FKARKAHS------MPPEKKEIF

MAATTPLLAVAGHGVSYKPANAKDSYYCFKFASSARTRVTLPQIIHWRCRSSHSSTGTTTMAVPVLKRREKQDEEQEWMGYLAPEKLEVL

SID10 (corn)

SID2 (soy)

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Inventor: Appl. No.:

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DVLARTCGTIAADEKRHETAYGRIVEQLLRLDPDGAMLAIADMMHKRIIMPAHLMHDGRDMNLFDHFAAVAQRLNVYTARDYADIVEFLV FQLAQVCGIIAADEKRHETAYTKIVEKLFEIDPDGAVLALADMMRKKVSMPAHLMYDGKDDNLFENYSAVAQQIGVYTAKDYADILEHLV PVLARICGTIAADEKRHENAYSRIVEKLLELDPTGAMVAIGDMMQKKITMPAHLMYDGEDPKLFDHFSAVAQRMGVYTANDYADILEFLI

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PVLARLCGTIAADEKRHENAYSRIVEKLLEVDPTGAMVAIGNMMEKKITMPAHLMYDGDDPRLFEHYSAVAQRIGVYTANDYADILEFLV HVLARVCGAIMADEKRHETAYTRIVAKLFEVDPDAAVRALGYMMRHRITMPAALMTDGRDAHLYAHYAAAAOOTGVYTASDYRSILEHLI VILARACGTIAADEKRHETAYGRIVEQLLQLDPEGAVLAVADMMRKRITMPAHLMHDGRDMDLFEHFAAVAQRLGVYTARDYADIVEFLV AALARVCGTVAADEKRHEAAYTRIVSRLLEADPDAGVRAVARMLRRGVAMPTSPISDGRRDDLYACVVSLAEQAGTYTVSDYCSIVEHLV

> SID10 (corn) (corn) (rice)

SID16 (rice) q14704824 q16957724 gi267036 SID12 SID14

KILAQICGMIASDEKRHETAYTKIVEKLFEVDPDGTVMAFADMMRKKIAMPAHLMYDGRDDNLFDNYSAVAQRIGVYTAKDYADILEFLV TTLAKICGTIAADEKRHETAYTRIVEKI.FEIDPDGTVQALASMMRKRITMPAHLMHDGRDDDLFDHYAAVAQRIGVYTATDYAGILEFLL 4KLAQICGIIAADEKRHETAYTKIVEKLFEIDPDGTVLALADMMRKKISMPAHLMYDGEDDNLFDNYSSVAQRIGVYTAKDYADILEFLV

SID23 (soy)

qi3355632

ERWRLEKI.E-GIMAEGKRAQDFVCGLAPRIRRIQERADERARKMKKHHG-VKFSWIFNKE---LLL RQWRVEELAAGLSGEGRRARDYVCGLPHKIRRMEEKAHDRAAQTQKKPTSVPFSWIFDRSVNVVIP REWRVEELAAGLSGEGRRARDYVCELPQKIRRMKEKAHERAVKAQKKPISIPINWIFDRHVSVMLP KRWKLETLESGLSGEGRRARDFVCGLAPRMRRAAERAEDRAKK-DEPRM-VKFSWIFDRE---AVV SID10 (corn) (corn) SID2 (soy)

(rice) SID14 SID12

SID16 (rice)

g14704824

qi267036

NRWKVENL-MGLSGEGHKAQDFVCGLAPRIRKLGERAQSLSKPVS-L---VPFSWIFNKE----LKV

RRWEVEKLGMGLSGEGRRAQDYLCTLPQRIRRLEERANDRVKLASKSKPSVSFSWIYGRE---VEL SRWKVDAF~TGLSGEGNKAQDFVCGLPARIRKLEERAAGRAKQTSKS--~VPFSWIFSRE---LVL SRWKVEQL-TGLSGEGRKAQEYVCGLPPRIRRLEERAQARGKESS-T---LKFSWIHDRE---VLL

KRWKLETLETGLSGEGRRARDFVCGLAKRMRRAAERAEDRAKK-DEQRK-VKFSWIYDRE---VIV GRWRLEKVQ-DLKDEGKKAQDFVCGLAPRIRRLQERADERARKMK-PHA-VKFSWIFNKE---IIL

> qi3355632 qi6957724

SID23 (soy)